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ABSTRACT

This report addresses the extent to which graduates of Indiana's colleges and universities remain in Indiana, as opposed to moving to another state. Using public institution data from the Commission's Student Information System (SIS) and Driver's License data from the Bureau of Motor Vehicles (BMV), staff tracked the 1990-91 degree recipients to find patterns of students remaining in the state following degree completion. The BMV data allows for a high "hit" rate for matching student data across a stable data source for determining whether a graduate is still in the state following graduation. Institutional scores indicate that the results reported here are not consistent with findings from published alumni analyses. The major findings include: (1) higher degree levels correlate with higher mobility, (2) Indiana residents who receive a degree from a public Indiana college or university tend to remain in the state after graduate, (3) the discipline areas that retain the highest proportion of Hoosier graduates are Trade and Industrial Arts, and Liberal Arts, and Education; while the disciplines that retain the smallest proportion are Engineering-related Studies and Language Arts; and (4) one in ten non-resident students who receive a postsecondary degree from a public Indiana college or university choose to remain in the state after graduation. Contains 6 figures and 16 tables. (JJL)

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ED 431 464

MOBILITY OF GRADUATES FROM INDIANA PUBLIC POSTSECONDARY EDUCATION:

WORKING PAPER*

November 1, 1995

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COMMISSION FOR HIGHER EDUCATION
Friday, November 10, 1995

DISCUSSION ITEM A: **Mobility of Graduates from Indiana Public Postsecondary Education: Working Paper**

Staff Recommendation For Discussion Only

Background

Recent questions relative to Indiana's educational attainment and degree production levels have prompted the questioning of what happens to graduates of Indiana's colleges and universities once they receive their degrees. Do they remain in Indiana, or move to another state?

Using public institution data from the Commission's Student Information System (SIS), and Driver's License data from the Bureau of Motor Vehicles (BMV), staff have tracked the 1990-91 degree recipients to find patterns of students remaining in the state following degree completion. The BMV data allows for a high "hit" rate for matching student data across a stable data source for determining whether a graduate is still in the state following graduation. Institutional sources indicate that the results reported here are not inconsistent with findings from published alumni analyses.

The major findings of the analysis include:

1. In general, higher degree levels correlate with higher mobility.

2. Indiana residents who receive a degree from a public Indiana college or university tend to remain in the state after graduation.

3. The discipline areas that retain the highest proportion of Hoosier graduates are Trade and Industrial, Arts and Liberal Arts, and Education, while the discipline areas that retain the smallest proportion of Hoosier graduates are Engineering-Related Studies, and Language Arts.

4. One in ten non-resident students who come to Indiana and receive a postsecondary degree from a public Indiana college or university choose to remain in the state after graduation.

Supporting Document

Mobility of Graduates from Indiana Public Postsecondary Education: Working Paper (November 1, 1995).

Mobility of Graduates from Indiana Public Postsecondary Education: Technical Report (November 1, 1995). Available on request from the Commission office.

MOBILITY OF GRADUATES FROM INDIANA PUBLIC POSTSECONDARY EDUCATION:

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*A working paper is a staff paper prepared to elicit discussion of particular issues. It does not necessarily represent the opinion of the Commission or of individual members.

MOBILITY OF GRADUATES FROM INDIANA PUBLIC POSTSECONDARY EDUCATION: WORKING PAPER

November 1, 1995

BACKGROUND

Although many have asked what happens to graduates of Indiana's colleges and universities once they receive their degrees, the question has gone largely unanswered. This question was raised most recently in April, 1995, in the context of the Commission's discussion of Indiana's degree attainment and production, compared nationally. While we know a great deal about our students during their enrollment, we know very little about their behavior once they have left our institutions.

Using public institution data from the Commission's Student Information System (SIS), and Driver's License data from the Bureau of Motor Vehicles (BMV), staff have tracked the 1990-91 degree recipients to find patterns for students remaining in the state following degree completion. The BMV data allows for a high "hit" rate for matching student data across a stable data source for determining whether a graduate is still in the state following graduation.

Institutional sources indicate that the results reported here are not inconsistent with findings from published alumni analyses.

METHOD

In order to study the rate at which students remain in state after graduation, the Bureau of Motor Vehicles (BMV) Drivers License database was selected as a source for comparison. The detailed steps of this process are outlined in Appendix C and in the Technical Report (available by contacting the Commission office). Degree recipients from 1990-91 were chosen as the source of analysis. The reason for this is that Drivers Licenses in Indiana are valid for four years and must be allowed time to expire in order to assume with confidence that the individual is no longer a resident of the state.

Degree Recipients from the Commission's Student Information System (SIS) data were matched, using Social Security Number (SSN) and gender, with BMV data. BMV data requested included SSN, gender, license expiration date, and current zip code.

Indiana Residents, in this analysis, are defined based on institutional classification in the SIS database. Beginning with the 1990-91 data, an explicit data field for residency status was added to the SIS record. In this field, institutions are instructed to classify each student as: assumed Indiana resident for tuition purposes, 76.5%; assumed non-resident for tuition purposes, 20.7%; or unknown, 2.7%. The percentages listed refer to degree recipients at or above the associate level, at public institutions. Students of unknown residency status were excluded from this analysis.

Valid Social Security Numbers assigned by the Social Security Administration are nine digits, generally displayed in three segments, i.e. 123-45-6789. All valid numbers in the first segment have only been assigned between the values of 001 and 728, inclusive. In addition, no valid SSNs have "00" as the second segment or "0000" as the third segment. Based on these criteria, 97.4% of the student records contained in the public institution SIS files include "valid" SSNs. As a confidence check in the match process, records with matching SSNs were also checked for consistent gender identifiers in both the SIS and BMV data sets.

MIGRATION STATUS

Migration Status, in this analysis, is explicitly defined only for those students with matching SSNs found in both data sets. Of those 1990-91 graduates found to have valid records in the BMV data set, if their drivers license expired as of June 1995 (date of match procedure, and four years after graduation year), they are considered to have left the state. Again, because drivers licenses in Indiana are valid for four years, the most recent usable SIS data for this analysis is FY1991.

In addition, different assumptions have been applied to Indiana residents than to non-residents with regard to the unmatched student records. In Figure 1, column 1 represents the *highest* possible assumption for students remaining in state after graduation. If this column of data is used as the basis of analysis and discussion, the assumption is that the students not found in the BMV data set behave, on average, in the same manner as their matched counterparts. Column 2 represents the *lowest* possible assumption for students remaining after graduation. In this case, all students with non-matching BMV records are assumed to have left the state after graduation. Realistically, for both resident and non-resident students, actual behavior lies somewhere between the percentages listed below. However, because a majority of non-resident students are assumed to retain their home-state driver's licenses while studying in Indiana (and then return home), their tendency to remain is expected to be much closer to the column 2 amount; whereas, resident students are assumed to behave in a manner closer to the column 1 amount based on the rate of matched records found across data sets and the finding that the drivers-license-holding rate for the Indiana population (87.9%, see Figure 2) is so close to the match rate found for Indiana residents (85.9%).

Figure 1:
Current Driver's License Holders as a Portion of Degree Recipients and Matched Records Found, By Residency Status

	% of matched records holding a current driver's license (1)	% of degree recipients holding a current driver's license (2)
Indiana Residents	82.6%	71.0%
Non-Indiana Residents	45.4%	10.0%

Figure 2:
Indiana Drivers License Holders as a Percent of the Population, By Age, 1994

Age Group	Population	License Holders	% Holders of Population
18-24	590,761	498,667	84.41%
25-34	878,000	793,736	90.40%
35-44	919,000	850,152	92.51%
45-54	674,000	644,787	95.67%
55-64	483,000	435,256	90.12%
65-up	735,000	538,476	73.26%
TOTAL	4,279,761	3,761,074	87.88%

Sources: U.S. Bureau of the Census (Indiana Business Research Center)
Indiana Bureau of Motor Vehicles

In the following discussion, the terms *Out-migration* and *tendency to remain* are used somewhat interchangeably. The strict interpretation of these terms refers to the extent to which the referred group is found to hold a current Indiana driver's license four years after receipt of a degree from an Indiana public college or university.

GROUPINGS OF CAMPUS-TYPES, PROGRAM AREAS, AND DEGREE LEVELS

In order to place some limitation on the level of detail, and enhance the general utility of analysis, the following discussion does not examine student patterns of individual campuses or degree programs. Instead, campuses are grouped according to their campus type as defined within the mission of the institution, as adopted by the Commission for Higher Education in the 1993 Annual Report (See Appendix A).

In addition, degree program areas are consolidated to 12 categories rather than the 50 discipline areas defined by the Classification of Instructional Programs. These groupings are shown in Appendix B.

Finally, staff felt it most useful to discuss degree recipients as one of three levels: Associate, Baccalaureate, and Graduate (combined Masters, Specialist, First Professional, and Doctorate).

Only these aggregations are considered in the following discussion. The Technical Report provides the detailed information by degree level, across campus and discipline, for reference, and is available by contacting the Commission office.

MOBILITY BY DEGREE LEVEL

In general, it can be expected that higher degrees correlate to increased mobility, and therefore, out-migration. This is evidenced in Figure 3, by following the pattern of decreased tendency to remain for the "Total" students across degree levels. Also, students who come to Indiana to study, are more likely to leave Indiana upon completion of their degree.

However, the out-migration patterns display some interesting characteristics when separated by residency status (see Figure 4). For example, Hoosier graduate degree recipients display a higher tendency to remain in state than do the baccalaureate degree recipients. This is influenced by degree recipients in education degree programs, who are likely to be already established residents of Indiana.

In addition, the pattern of out-migration for non-Hoosiers, is reversed compared to total degree recipients. Recipients of higher degrees are more likely to remain in state following graduation than are those who come to Indiana to study at the undergraduate level.

Figure 3:
Percent of Graduates Remaining in State Following Graduation, All Students

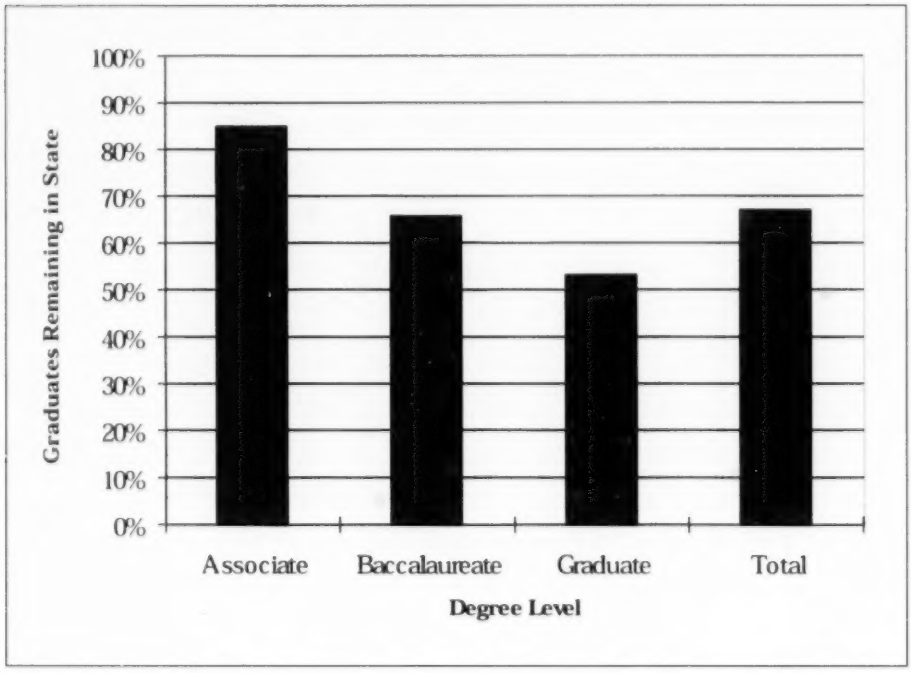
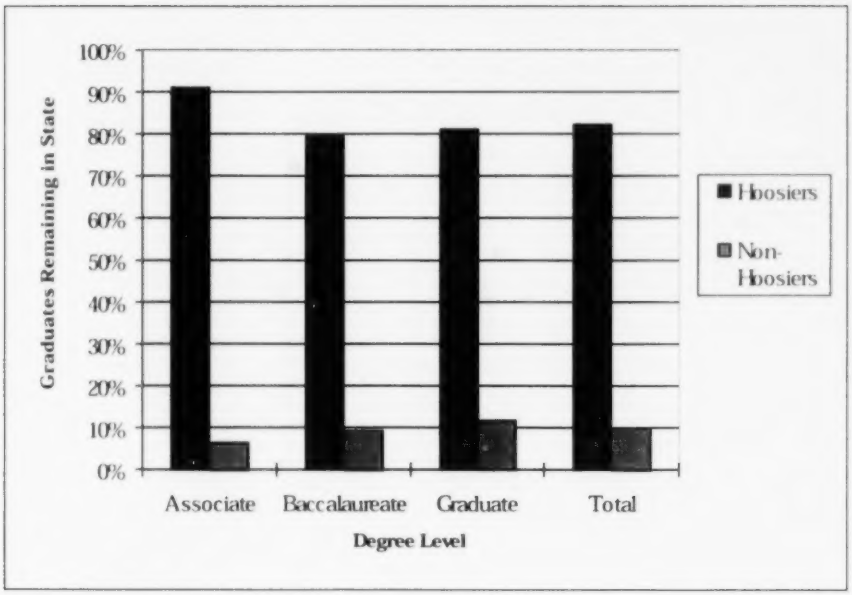


Figure 4:
Percent of Graduates Remaining in State Following Graduation, By Residency Status



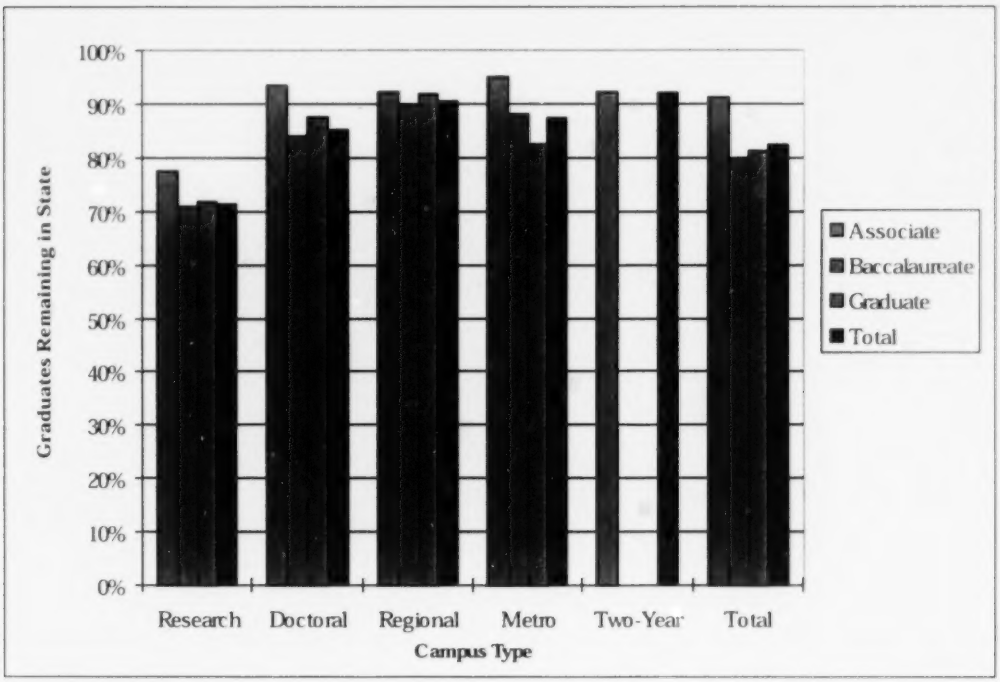
MOBILITY BY CAMPUS TYPE

Comparing migration by campus type, the graduates from the two-year and regional campuses display the highest tendencies for remaining in state after graduation (see Figure 5). As expected, the highest out-migration occurs for graduates from the research campuses. Similar to the overall out-migration by level, the baccalaureate degree seeking students at the research campuses display the highest out-migration.

The highest tendency to remain (above 90%) occurs for associate degree recipients from the doctoral, regional, metropolitan, and two-year campuses, as well as the graduate degree recipients from the regional campuses.

Non-Hoosiers, in general, display a low tendency for remaining in state following graduation, with those from the Limited Doctoral institutions displaying the highest tendency for remaining. (Refer to Tables C-1 through C-4 for detail on non-Hoosiers by campus-type.)

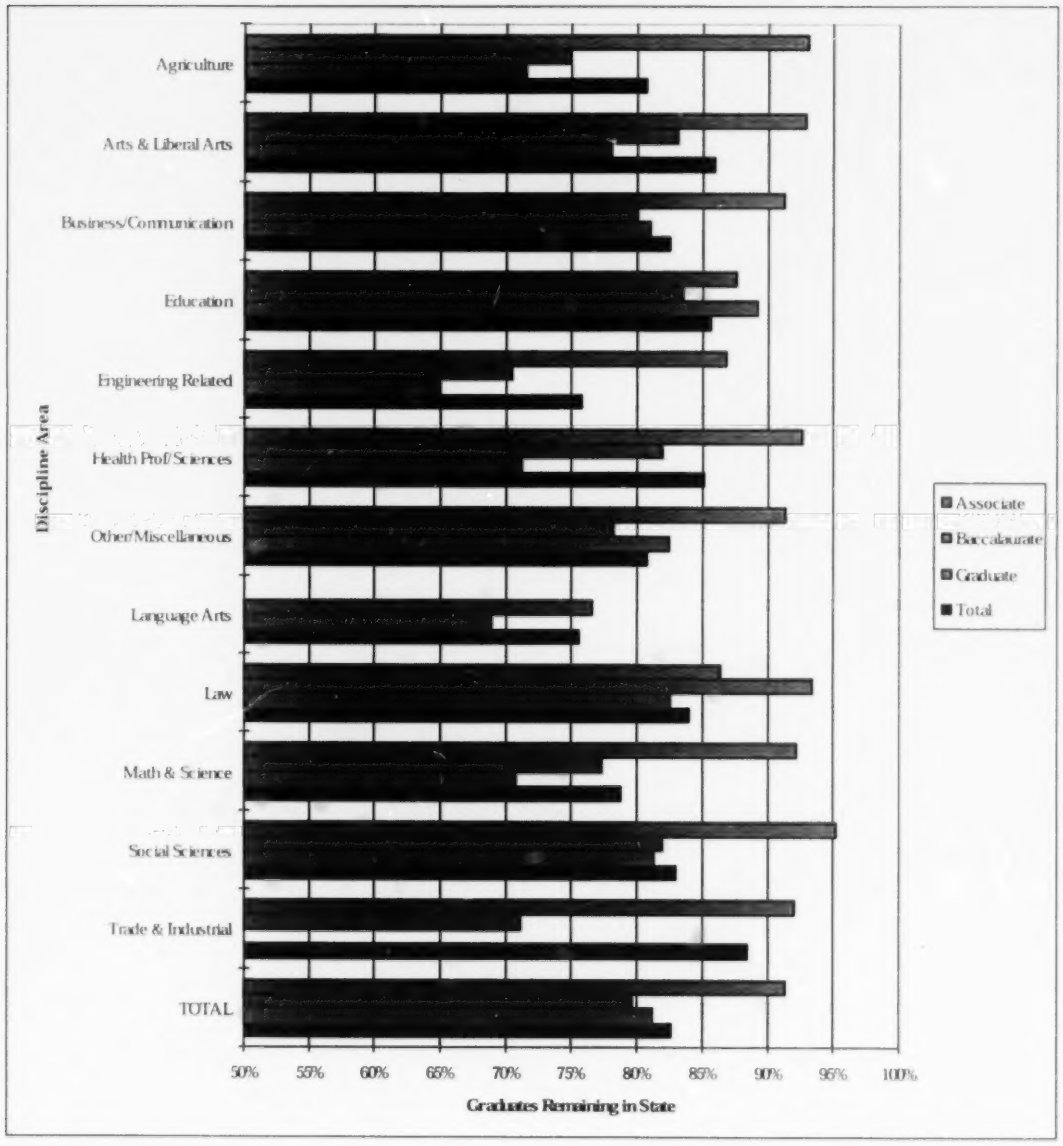
Figure 5:
Percent of Graduates Remaining in State Following Graduation,
By Campus Type and Degree Level:
Hoosier Students



MOBILITY BY DISCIPLINE

An examination of out-migration patterns by degree-level and discipline area (see Figure 5) indicates that the highest tendency for departure is displayed by graduate degree recipients in "engineering, architecture, and related technologies," (64.9% remaining after graduation) while the lowest tendency for out-migration is displayed by the associate degree recipients in "social sciences" (95.1% remaining after graduation). The language arts data for associate degree recipients should be ignored in this context because of the low number of graduates represented.

Figure 6:
Percent of Graduates Remaining in State Following Graduation, By Discipline Area and Degree Level: Hoosier Students



In general, engineering and language arts graduates (24.2% and 25.4%, respectively) display the highest out-migration rates, while those graduates of the trade and industrial area display the lowest (11.6%). However, trade and industrial degrees are mostly at the associate level. If this is factored out, Arts and liberal Arts (14.2% departing) and Health (14.9% departing) are the degree program areas in which Indiana appears most likely to retain it graduates.

Among non-Hoosiers who receive their degree from an Indiana institution, those who receive degrees in health professions and related sciences appear most likely to remain in state after graduation (16.7%, compared to 10% for all students).

FINDINGS

1. In general, higher degree levels correlate with higher mobility. Across all graduates, resident and non-resident, 85% of all associate degree recipients, 66% of all baccalaureate degree recipients, and 53% of all graduate degree recipients still held a valid Indiana driver's license four years after graduation.

2. Indiana residents who receive a degree from a public Indiana college or university tend to remain in the state after graduation. Four years after receiving a degree, 83% of Hoosiers were found to be in possession of a valid Indiana driver's licenses.

3. The discipline areas that retain the highest proportion of Hoosier graduates are Trade and Industrial (88%), Arts and Liberal Arts (86%), and Education (86%), while the discipline areas that retain the smallest proportion of Hoosier graduates are Engineering-Related Studies (76%) and Language Arts (76%).

4. One in ten non-resident students who come to Indiana and receive a postsecondary degree from a public Indiana college or university choose to remain in the state after graduation. Four years after receiving a degree, 10% of the non-resident degree recipients were found to hold a valid Indiana driver's.

DATA TABLES

Notes:

Detailed data source information for Tables A, B, C, and D can be found in the corresponding Tables in the Technical Report.

Calculation notes and assumptions used for resident and non-resident students are found with Table A-1.

Table A-1:
Degree Recipients Remaining in State,
Indiana Resident Associate Degree Recipients
By Campus Type

(Includes calculation and assumption notes)

	(1) TOTAL Degrees Awarded	(2) Drivers License % match	(3) Remain	(4) Depart	(5) Sub-Total	(6) % Still Valid	(7) % of Recipients Still with Valid License
			---------- Of Those Match ing ----------				
Research Campuses	515	86.8%	346	101	447	77.4%	67.2%
Limited Doctoral	324	85.8%	260	18	278	93.5%	80.2%
Regional and Four-Year	1678	86.5%	1339	112	1451	92.3%	79.8%
Metropolitan: IUPUI	535	93.1%	473	25	498	95.0%	88.4%
Two-Year Campuses	2828	85.4%	2226	188	2414	92.2%	78.7%
GRAND TOTAL	5880	86.5%	4644	444	5088	91.3%	79.0%
Source or Calculation	SIS	(col 5) / (col 1)	License Still Valid	License Expired	(col 3) + (col 4)	(col 3) / (col 5)	(col 3) / (col 1)

For resident students, column 6 is assumed to represent the "best" estimate for students remaining in state after graduation.

For Non-resident students, column 7 is assumed to represent the "best" estimate for students remaining in state after graduation.

Table A-2:
Degree Recipients Remaining in State,
Indiana Resident Baccalaureate Degree Recipients
By Campus Type

	(1) TOTAL Degrees Awarded	(2) Drivers License % match	(3) Remain	(4) Depart	(5) Sub-Total	(6) % Still Valid	(7) % of Recipients Still with Valid License
			---------- Of Those Matching ----------				
Research Campuses	7093	85.7%	4305	1772	6077	70.8%	60.7%
Limited Doctoral	3477	91.2%	2666	504	3170	84.1%	76.7%
Regional and Four-Year	3092	84.8%	2346	275	2621	89.5%	75.9%
Metropolitan: IUPUI	1707	90.5%	1360	185	1545	88.0%	79.7%
Two-Year Campuses	0	na	0	0	0	na	na
GRAND TOTAL	15369	87.3%	10677	2736	13413	79.6%	69.5%

(Refer to Table A-1 for notes on calculation and resident vs. non-resident assumptions.)

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Table A-3:
Degree Recipients Remaining in State,
Indiana Resident Graduate Degree Recipients
By Campus Type

	(1) TOTAL Degrees Awarded	(2) Drivers License % match	(3) Remain	(4) Depart	(5) Sub-Total	(6) % Still Valid	(7) % of Recipients Still with Valid License
			Of Those Matching				
Research Campuses	1637	73.0%	857	338	1195	71.7%	52.4%
Limited Doctoral	759	82.6%	549	78	627	87.6%	72.3%
Regional and Four-Year	702	81.9%	528	47	575	91.8%	75.2%
Metropolitan: IUPUI	941	88.9%	690	147	837	82.4%	73.3%
Two-Year Campuses	0	na	0	0	0	na	na
GRAND TOTAL	4039	80.1%	2624	610	3234	81.1%	65.0%

(Refer to Table A-1 for notes on calculation and resident vs. non-resident assumptions.)

Table A-4:
Degree Recipients Remaining in State,
Indiana Resident Associate, Baccalaureate, or Graduate Degree Recipients
By Campus Type

	(1) TOTAL Degrees Awarded	(2) Drivers License % match	(3) Remain	(4) Depart	(5) Sub-Total	(6) % Still Valid	(7) % of Recipients Still with Valid License
			Of Those Matching				
Research Campuses	9245	83.5%	5508	2211	7719	71.4%	59.6%
Limited Doctoral	4560	89.4%	3475	600	4075	85.3%	76.2%
Regional and Four-Year	5472	84.9%	4213	434	4647	90.7%	77.0%
Metropolitan: IUPUI	3183	90.5%	2523	357	2880	87.6%	79.3%
Two-Year Campuses	2828	85.4%	2226	188	2414	92.2%	78.7%
GRAND TOTAL	25288	85.9%	17945	3790	21735	82.6%	71.0%

(Refer to Table A-1 for notes on calculation and resident vs. non-resident assumptions.)

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Table B-1:
Degree Recipients Remaining in State,
Indiana Resident Associate Degree Recipients
By Discipline Area

	(1) TOTAL Degrees Awarded	(2) Drivers License % match	(3) Remain	(4) Depart	(5) Sub-Total	(6) % Still Valid	(7) % of Recipients Still with Valid License
			Of Those Matching				
Agriculture & Rel.	128	89.8%	107	8	115	93.0%	83.6%
Arts and Liberal Arts	504	83.7%	392	30	422	92.9%	77.8%
Business and Comm.	1495	87.0%	1187	114	1301	91.2%	79.4%
Education	52	92.3%	42	6	48	87.5%	80.8%
Engineering, Arch, & Rel.	915	85.8%	681	104	785	86.8%	74.4%
Health Prof & Rel. Sci.	1483	87.1%	1196	96	1292	92.6%	80.6%
Other & Miscellaneous	103	89.3%	84	8	92	91.3%	81.6%
Language Arts	4	100.0%	4	0	4	100.0%	100.0%
Law and Legal Studies	53	83.0%	38	6	44	86.4%	71.7%
Math & Science	196	84.7%	153	13	166	92.2%	78.1%
Social Sciences	237	86.9%	196	10	206	95.1%	82.7%
Trade and Industrial	710	86.3%	564	49	613	92.0%	79.4%
GRAND TOTAL	5880	86.5%	4644	444	5088	91.3%	79.0%

(Refer to Table A-1 for notes on calculation and resident vs. non-resident assumptions.)

Table B-2:
Degree Recipients Remaining in State,
Indiana Resident Baccalaureate Degree Recipients
By Discipline Area

	(1) TOTAL Degrees Awarded	(2) Drivers License % match	(3) Remain	(4) Depart	(5) Sub-Total	(6) % Still Valid	(7) % of Recipients Still with Valid License
			Of Those Matching				
Agriculture & Rel.	245	87.8%	161	54	215	74.9%	65.7%
Arts and Liberal Arts	1025	85.2%	725	148	873	83.0%	70.7%
Business and Comm.	4579	88.1%	3226	808	4034	80.0%	70.5%
Education	2183	91.1%	1659	329	1988	83.5%	76.0%
Engineering, Arch, & Rel.	1647	83.2%	964	406	1370	70.4%	58.5%
Health Prof & Rel. Sci.	1071	88.2%	774	171	945	81.9%	72.3%
Other & Miscellaneous	465	87.7%	319	89	408	78.2%	68.6%
Language Arts	682	84.8%	442	136	578	76.5%	64.8%
Law and Legal Studies	32	93.8%	28	2	30	93.3%	87.5%
Math & Science	1034	85.7%	685	201	886	77.3%	66.2%
Social Sciences	2263	86.5%	1603	355	1958	81.9%	70.8%
Trade and Industrial	143	89.5%	91	37	128	71.1%	63.6%
GRAND TOTAL	15369	87.3%	10677	2736	13413	79.6%	69.5%

(Refer to Table A-1 for notes on calculation and resident vs. non-resident assumptions.)

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Table B-3:
Degree Recipients Remaining in State,
Indiana Resident Graduate Degree Recipients
By Discipline Area

	(1) TOTAL Degrees Awarded	(2) Drivers License % match	(3)	(4)	(5)	(6)	(7) % of Recipients Still with Valid License
			Of Those Matching				
			Remain	Depart	Sub-Total	% Still Valid	
Agriculture & Rel.	32	65.6%	15	6	21	71.4%	46.9%
Arts and Liberal Arts	87	78.2%	53	15	68	77.9%	60.9%
Business and Commun.	855	80.2%	555	131	686	80.9%	64.9%
Education	1352	83.9%	1012	123	1135	89.2%	74.9%
Engineering, Arch. & Rel.	180	63.3%	74	40	114	64.9%	41.1%
Health Prof & Rel. Sci.	576	81.9%	336	136	472	71.2%	58.3%
Other & Miscellaneous	54	63.0%	28	6	34	82.4%	51.9%
Language Arts	113	82.3%	64	29	93	68.8%	56.6%
Law and Legal Studies	325	82.8%	222	47	269	82.5%	68.3%
Math & Science	190	64.7%	87	36	123	70.7%	45.8%
Social Sciences	275	79.6%	178	41	219	81.3%	64.7%
Trade and Industrial	0	na	0	0	0	na	na
GRAND TOTAL	4039	80.1%	2624	610	3234	81.1%	65.0%

(Refer to Table A-1 for notes on calculation and resident vs. non-resident assumptions.)

Table B-4:
Degree Recipients Remaining in State,
Indiana Resident Associate, Baccalaureate, or Graduate Degree Recipients
By Discipline Area

	(1) TOTAL Degrees Awarded	(2) Drivers License % match	(3)	(4)	(5)	(6)	(7) % of Recipients Still with Valid License
			Of Those Matching				
			Remain	Depart	Sub-Total	% Still Valid	
Agriculture & Rel.	405	86.7%	283	68	351	80.6%	69.9%
Arts and Liberal Arts	1616	84.3%	1170	193	1363	85.8%	72.4%
Business and Commun.	6929	86.9%	4968	1053	6021	82.5%	71.7%
Education	3587	88.4%	2713	458	3171	85.6%	75.6%
Engineering, Arch. & Rel.	2742	82.7%	1719	550	2269	75.8%	62.7%
Health Prof & Rel. Sci.	3130	86.5%	2306	403	2709	85.1%	73.7%
Other & Miscellaneous	622	85.9%	431	103	534	80.7%	69.3%
Language Arts	799	84.5%	510	165	675	75.6%	63.8%
Law and Legal Studies	410	83.7%	288	55	343	84.0%	70.2%
Math & Science	1420	82.7%	925	250	1175	78.7%	65.1%
Social Sciences	2775	85.9%	1977	406	2383	83.0%	71.2%
Trade and Industrial	853	86.9%	655	86	741	88.4%	76.8%
GRAND TOTAL	25288	85.9%	17945	3790	21735	82.6%	71.0%

(Refer to Table A-1 for notes on calculation and resident vs. non-resident assumptions.)

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Table C-1:
Degree Recipients Remaining in State,
NON-Resident Associate Degree Recipients
By Campus Type

	(1) TOTAL Degrees Awarded	(2) Drivers License % match	(3)	(4)	(5)	(6)	(7) % of Recipients Still with Valid License
			Of Those Matching				
			Remain	Depart	Sub-Total	% Still Valid	
Research Campuses	67	10.4%	4	3	7	57.1%	6.0%
Limited Doctoral	11	54.5%	6	0	6	100.0%	54.5%
Regional and Four-Year	49	24.5%	9	3	12	75.0%	18.4%
Metropolitan: IUPUI	190	0.5%	1	0	1	100.0%	0.5%
Two-Year Campuses	135	10.4%	9	5	14	64.3%	6.7%
GRAND TOTAL	452	8.8%	29	11	40	72.5%	6.4%

(Refer to Table A-1 for notes on calculation and resident vs. non-resident assumptions.)

Table C-2:
Degree Recipients Remaining in State,
NON-Resident Baccalaureate Degree Recipients
By Campus Type

	(1) TOTAL Degrees Awarded	(2) Drivers License % match	(3)	(4)	(5)	(6)	(7) % of Recipients Still with Valid License
			Of Those Matching				
			Remain	Depart	Sub-Total	% Still Valid	
Research Campuses	3067	18.2%	243	316	559	43.5%	7.9%
Limited Doctoral	396	28.5%	70	43	113	61.9%	17.7%
Regional and Four-Year	169	10.7%	17	1	18	94.4%	10.1%
Metropolitan: IUPUI	54	20.4%	7	4	11	63.6%	13.0%
Two-Year Campuses	0	na	0	0	0	na	na
GRAND TOTAL	3686	19.0%	337	364	701	48.1%	9.1%

(Refer to Table A-1 for notes on calculation and resident vs. non-resident assumptions.)

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Table C-3:
Degree Recipients Remaining in State,
NON-Resident Graduate Degree Recipients
By Campus Type

	(1) TOTAL Degrees Awarded	(2) Drivers License % match	(3)	(4)	(5)	(6)	(7) % of Recipients Still with Valid License
			Remain	Depart	Sub-Total	% Still Valid	
			- - - - - - - - - Of Those Matching - - - - - - - - -				
Research Campuses	2265	28.3%	259	383	642	40.3%	11.4%
Limited Doctoral	342	28.4%	46	51	97	47.4%	13.5%
Regional and Four-Year	35	2.9%	1	0	1	100.0%	2.9%
Metropolitan: IUPUI	69	46.4%	15	17	32	46.9%	21.7%
Two-Year Campuses	0	na	0	0	0	na	na
GRAND TOTAL	2711	28.5%	321	451	772	41.6%	11.8%

(Refer to Table A-1 for notes on calculation and resident vs. non-resident assumptions.)

Table C-4:
Degree Recipients Remaining in State,
NON-Resident Associate, Baccalaureate, or Graduate Degree Recipients
By Campus Type

	(1) TOTAL Degrees Awarded	(2) Drivers License % match	(3)	(4)	(5)	(6)	(7) % of Recipients Still with Valid License
			Remain	Depart	Sub-Total	% Still Valid	
			- - - - - - - - - Of Those Matching - - - - - - - - -				
Research Campuses	5399	22.4%	506	702	1208	41.9%	9.4%
Limited Doctoral	749	28.8%	122	94	216	56.5%	16.3%
Regional and Four-Year	253	12.3%	27	4	31	87.1%	10.7%
Metropolitan: IUPUI	313	14.1%	23	21	44	52.3%	7.3%
Two-Year Campuses	135	10.4%	9	5	14	64.3%	6.7%
GRAND TOTAL	6849	22.1%	687	826	1513	45.4%	10.0%

(Refer to Table A-1 for notes on calculation and resident vs. non-resident assumptions.)

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Table D-1:
Degree Recipients Remaining in State,
NON-Resident Associate Degree Recipients
By Discipline Area

	(1) TOTAL Degrees Awarded	(2) Drivers License % match	(3) Remain	(4) Depart	(5) Sub-Total	(6) % Still Valid	(7) % of Recipients Still with Valid License
			Of Those Matching				
Agriculture & Rel.	4	25.0%	1	0	1	100.0%	25.0%
Arts and Liberal Arts	213	1.4%	1	2	3	33.3%	0.5%
Business and Commun.	52	19.2%	7	3	10	70.0%	13.5%
Education	2	0.0%	0	0	0	na	0.0%
Engineering, Arch, & Rel.	68	5.9%	2	2	4	50.0%	2.9%
Health Prof & Rel. Sci.	55	23.6%	13	0	13	100.0%	23.6%
Other & Miscellaneous	7	42.9%	2	1	3	66.7%	28.6%
Language Arts	2	0.0%	0	0	0	na	0.0%
Law and Legal Studies	1	100.0%	1	0	1	100.0%	100.0%
Math & Science	7	28.6%	1	1	2	50.0%	14.3%
Social Sciences	7	0.0%	0	0	0	na	0.0%
Trade and Industrial	34	8.8%	1	2	3	33.3%	2.9%
GRAND TOTAL	452	8.8%	29	11	40	72.5%	6.4%

(Refer to Table A-1 for notes on calculation and resident vs. non-resident assumptions.)

Table D-2:
Degree Recipients Remaining in State,
NON-Resident Baccalaureate Degree Recipients
By Discipline Area

	(1) TOTAL Degrees Awarded	(2) Drivers License % match	(3) Remain	(4) Depart	(5) Sub-Total	(6) % Still Valid	(7) % of Recipients Still with Valid License
			Of Those Matching				
Agriculture & Rel.	32	21.9%	4	3	7	57.1%	12.5%
Arts and Liberal Arts	189	21.7%	23	18	41	56.1%	12.2%
Business and Commun.	1254	19.7%	107	140	247	43.3%	8.5%
Education	256	21.9%	37	19	56	66.1%	14.5%
Engineering, Arch, & Rel.	529	14.7%	49	29	78	62.8%	9.3%
Health Prof & Rel. Sci.	114	28.1%	19	13	32	59.4%	16.7%
Other & Miscellaneous	119	15.1%	11	7	18	61.1%	9.2%
Language Arts	221	19.9%	17	27	44	38.6%	7.7%
Law and Legal Studies	3	33.3%	1	0	1	100.0%	33.3%
Math & Science	328	16.5%	30	24	54	55.6%	9.1%
Social Sciences	612	19.6%	37	83	120	30.8%	6.0%
Trade and Industrial	29	10.3%	2	1	3	66.7%	6.9%
GRAND TOTAL	3686	19.0%	337	364	701	48.1%	9.1%

(Refer to Table A-1 for notes on calculation and resident vs. non-resident assumptions.)

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Table D-3:
Degree Recipients Remaining in State,
NON-Resident Graduate Degree Recipients
By Discipline Area

	(1) TOTAL Degrees Awarded	(2) Drivers License % match	(3)	(4)	(5)	(6)	(7) % of Recipients Still with Valid License
			Remain	Depart	Sub-Total	% Still Valid	
			---------- Of Those Matching ----------				
Agriculture & Rel.	61	21.3%	5	8	13	38.5%	8.2%
Arts and Liberal Arts	234	29.5%	24	45	69	34.8%	10.3%
Business and Commun.	502	25.9%	38	92	130	29.2%	7.6%
Education	342	22.5%	32	45	77	41.6%	9.4%
Engineering, Arch, & Rel.	382	21.5%	34	48	82	41.5%	8.9%
Health Prof & Rel. Sci.	143	31.5%	20	25	45	44.4%	14.0%
Other & Miscellaneous.	59	27.1%	10	6	16	62.5%	16.9%
Language Arts	201	31.3%	37	26	63	58.7%	18.4%
Law and Legal Studies	103	33.0%	11	23	34	32.4%	10.7%
Math & Science	383	39.2%	62	88	150	41.3%	16.2%
Social Sciences	301	30.9%	48	45	93	51.6%	15.9%
Trade and Industrial	0	na	0	0	0	na	na
GRAND TOTAL	2711	28.5%	321	451	772	41.6%	11.8%

(Refer to Table A-1 for notes on calculation and resident vs. non-resident assumptions.)

Table D-4:
Degree Recipients Remaining in State,
NON-Resident Associate, Baccalaureate, or Graduate Degree Recipients
By Discipline Area

	(1) TOTAL Degrees Awarded	(2) Drivers License % match	(3)	(4)	(5)	(6)	(7) % of Recipients Still with Valid License
			Remain	Depart	Sub-Total	% Still Valid	
			---------- Of Those Matching ----------				
Agriculture & Rel.	97	21.6%	10	11	21	47.6%	10.3%
Arts and Liberal Arts	636	17.8%	48	65	113	42.5%	7.5%
Business and Commun.	1808	21.4%	152	235	387	39.3%	8.4%
Education	600	22.2%	69	64	133	51.9%	11.5%
Engineering, Arch, & Rel.	979	16.8%	85	79	164	51.8%	8.7%
Health Prof & Rel. Sci.	312	28.8%	52	38	90	57.8%	16.7%
Other & Miscellaneous	185	20.0%	23	14	37	62.2%	12.4%
Language Arts	424	25.2%	54	53	107	50.5%	12.7%
Law and Legal Studies	107	33.6%	13	23	36	36.1%	12.1%
Math & Science	718	28.7%	93	113	206	45.1%	13.0%
Social Sciences	920	23.2%	85	128	213	39.9%	9.2%
Trade and Industrial	63	9.5%	3	3	6	50.0%	4.8%
GRAND TOTAL	6849	22.1%	687	826	1513	45.4%	10.0%

(Refer to Table A-1 for notes on calculation and resident vs. non-resident assumptions.)

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APPENDICES

APPENDIX A:

Types of Indiana Postsecondary Institutions

1. **Postsecondary Centers**

2. **Two-Year Institutions**
   - Ivy Tech State College
   - Vincennes University

3. **Regional Institutions**
   - Indiana and Purdue University Regional Campuses
     - Indiana University East
     - Indiana University Kokomo
     - Indiana University Northwest
     - Indiana University South Bend
     - Indiana University Southeast
     - Purdue University Calumet
     - Purdue University North Central
     - Indiana University Purdue University Fort Wayne
   - University of Southern Indiana

4. **Metropolitan University: IUPUI**

5. **Universities with Limited Doctoral Programs**
   - Ball State University
   - Indiana State University

6. **Graduate/Research Universities**
   - Indiana University Bloomington
   - Purdue University West Lafayette

7. **Independent Colleges and Universities**

Source: *Indiana Postsecondary Education: The Challenge 1993-2003*, January 1993

APPENDIX B:

Degree Program Area Groupings

Agriculture and Related Areas

- 01-Agribusiness and Agricultural Production
- 02-Agricultural Science
- 03-Renewable Natural Resources

Business and Communication

- 06-Business and Management
- 07-Business (Administrative Support)
- 08-Marketing and Distribution
- 09-Communications
- 10-Communications Technologies
- 44-Public Affairs

Education

- 13-Education

Engineering, Architecture and Related Technologies

- 04-Architecture and Environmental Design
- 14-Engineering
- 15-Engineering & Engineering Related Technologies

Health Professions and Related Sciences

- 17-Allied Health
- 18-Health Science

Other/Miscellaneous Areas of Study

- 12-Consumer, Personal and Miscellaneous Studies
- 19-Home Economics
- 20-Vocational Home Economics
- 21-Industrial Arts
- 28-Military Sciences
- 29-Military Technologies
- 30-Multi/Interdisciplinary Studies
- 31-Parks and Recreation
- 32-Basic Skills
- 33-Citizenship/Civic Activities
- 34-Health-Related Activities
- 35-Interpersonal Skills
- 36-Leisure and Recreational Activities
- 37-Personal Awareness

APPENDIX B:

Degree Program Area Groupings
(continued)

Language Arts
- 16-Foreign Languages
- 23-Letters

Law and Legal Studies
- 22-Law

Arts and Liberal Arts
- 05-Area and Ethnic Studies
- 24-Liberal/General Studies
- 50-Visual and Performing Arts

Mathematics and Sciences
- 11-Computer and Information Sciences
- 26-Life Sciences
- 27-Mathematics
- 40-Physical Sciences
- 41-Science Technologies

Social Sciences
- 25-Library and Archival Sciences
- 38-Philosophy and Religion
- 39-Theology
- 42-Psychology
- 43-Protective Services
- 45-Social Sciences

Trade and Industrial
- 46-Construction Trades
- 47-Mechanics and Repairers
- 48-Precision Production
- 49-Transportation and Material Movers

APPENDIX C:

Technical Notes on Mobility Study Methodology

Step	Process Description	FY 1991 (Hoosiers based on Residency Status)	FY 1991 (Hoosiers based on Reported Zip Code)	FY 1989 (Hoosiers based on Reported Zip Code)
1	Identify all degree recipients from Student Information System (SIS) Database.	44,098	44,098	41,938
2a	Generate Social Security Number data file to be matched with Bureau of Motor Vehicles (BMV) Drivers License database.	✓	✓	✓
2b	Receive data set from BMV containing Social Security Number, Gender, Drivers License Expiration Date, and Zip Code.	✓	✓	✓
3a	Create data sub-set containing only degree recipients.	44,098	44,098	41,938
4a	Identify students receiving more than one degree. Assign highest degree to first degree field, so that each student on any given campus is reported with only one degree. (No reduction in total number of degree recipients.)	n=928	n=928	n=931
4b	Remove data records for independent colleges. (Insufficient data to provide useful analyses prior to 1993.)	8,997	8,997	7,920
4c	Separate out students identified as Non-Hoosiers. (Non-Hoosiers will be examined in later analyses).	6,919	7,018	7,302
4d	Remove data records for Students of unknown residency status.	1,670	162	576
4e	Resulting data set in which to run match against BMV data file.	26,512	27,921	26,140
5	Match SIS data records (reported in 4e) with BMV data. Remove non-matching data records.	3,665	3,862	5,597
6	Remove data records which fail confidence check (matched gender in both records) or are duplicate SSN's. (For students receiving degrees from more than one campus, retain the entry with the highest degree-level.)	62	66	48
7	Final data set for out-migration analyses.	22,785	23,993	20,495

Note: These same steps were repeated for Non-Hoosier Students.